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(54) METHOD AND APPARATUS FOR PERFORMING A READ NEXT HIGHEST PRIORITY MATCH INSTRUCTION IN A CONTENT ADDRESSABLE MEMORY DEVICE

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(57) **ABSTRACT**

A content address memory (CAM) device that implements a read next highest priority or "RNHPM" instruction. The CAM device initially searches its CAM locations for a match with comparand data. If multiple matches are identified, then the CAM device initially outputs the highest priority matching address. The CAM device may output the highest priority matching address in the same system or clock cycle in which the compare instruction was provided. The CAM device may also output data stored in one or more of the CAM cells located at the highest priority matching location and/or status information including the match flags, a full flag, validity bits (e.g., skip and empty bits), and other status information. An RNHPM instruction may then be provided to the CAM device in the next clock cycle or a later clock cycle and cause the next highest priority matching address to be output by the CAM device. The next highest priority matching address may be output in the same or subsequent cycle as the RNHPM instruction and may also cause the CAM device to output data stored in one or more of the CAM cells located at the next highest priority matching location and/or status information for that location. RNHPM instructions can continue to be supplied to the CAM device until no further matching locations are detected.